CERTIFICATE OF MAILING

hereby certify that this correspondence is being deposited with the United States Postal Service, as first iail, postage prepaid, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O.

Box 1415, Washington, D.C. 20231, on September 22, 2006.

Dated: September 22, 2006

Atty. Docket No. 7146.0120

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Van Beek et al.

Group Art Unit: 2181

U.S. Pat. App. No.:

10/058,869

Examiner: TBD

Filed: January 28, 2002

Customer No.: 55648

Title: SEGMENTATION METADATA FOR AUDIO-VISUAL CONTENT

INFORMATION DISCLOSURE STATEMENT **IN ACCORDANCE WITH 37 CFR §1.98**

Mail Stop Amendment Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Dear Sir:

Applicants submit herewith five sheets of Form PTO-1449 (Modified) listing the patents and non-patent publications of which Applicants are aware and which Applicants desire to have considered by the Patent Office in accordance with 37 CFR §1.97. In accordance with 37 CFR §1.97(b)(3), this Information Disclosure Statement is being submitted before the mailing date of a first Office Action on the merits of the above-identified application.

In accordance with 37 CFR §1.97(h), the filing of this Information Disclosure Statement will not be regarded as an admission that any patent or publication or combination of patents and publications referred to herein is, or is considered to be, material to patentability under 37 CFR \$1.56(b) unless specifically designated as such.

A list of the patents and publications enclosed herewith is set forth on the attached five pages of Form PTO-1449 (Modified).

The person making this statement is the attorney who signs below on the basis of the information supplied by the inventor and the information in his file.

Respectfully submitted,

CHERNOFF, VILHAUER, McCLUNG & STENZEL

By: Kevin L. Russell, Reg. No. 38,292

1600 ODS Tower 601 SW Second Avenue

Portland, OR 97204 Tel: 503-227-5631 Fax: 503-228-4373

Dated: September 22, 2006

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

stitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet of

	Complete if Known	
Application Number	10/058,869	
Filing Date	January 28, 2002	
First Named Inventor	Van Beek et al.	
Art Unit	2181	
Examiner Name	TBD	
Attorney Docket Number	7146.0120	

			U.S. PATENT [DOCUMENTS		
Examiner Initials *	Cite No.1	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevan Passages or Relevant	
11110013	1	Number - Kind Code ² (if known)			Figures Appear	
		US- 4,183,056	01-08-1980	Evans et al.		
		US- 4,253,108	02-24-1981	Engel		
	ļ	US- 4,298,884	11-03-1981	Reneau		
		US- 4,937,685	06-26-1990	Barker et al.		
		US- 5,027,400	06-25-1991	Baji et al.		
		US- 5,109,482	4-28-1992	Bohrman		
		US- 5,148,154	09-15-1992	MacKay, et al.		
		US- 5,200,825	04-06-1993	Perine		
		US- 5,333,091	07-26-1994	lggulden et al.		
		US- 5,339,393	08-16-1994	Duffy et al.		
		US- 5,424,770	06-13-1995	Schmelzer, et al.		
		US- 5,452,016	09-19-1995	Ohara et al.		
		US- 5,521,841	05-28-1996	Arman et al.		
		US- 5,635,982	06-03-1997	Zhang et al.		
		US- 5,654,769	08-05-1997	Ohara et al.		
		US- 5,664,227	09-02-1997	Mauldin et al.		
		US- 5,675,752	10-07-1997	Scott et al.		
·	<u> </u>	US- 5,778,108	07-07-1998	Coleman, Jr.		
,	Ì	US- 5,805,733	09-08-1998	Wang et al.		
	Ì	US- 5,821,945	10-13-1998	Yeo et al.		
	Î	US- 5,875,107	02-23-1999	Hoffberg et al.		
		US- 5,920,300	07-06-1999	Coleman, Jr.		
		US- 5,923,365	07-13-1999	Tamir et al.		
	<u> </u>	US- 5,933,811	08-1999	Angles et al.		
	 	US- 5,959,681	09-28-1999	Cho		
	ł –	US- 5,959,697	9-28-1999	Coleman, Jr.		
		US- 5,969,755	10-19-1999	Courtney		
	· · · · · · · · · · · · · · · · · · ·	US- 5,990,980	11-23-1999	Golin		
	-	US- 5,995,095	11-30-1999	Ratakonda		
	<u> </u>	US- 6,014,183	01-11-2000	Hoang		
	 	US- 6,055,018	04-25-2000	Swan		
	<u> </u>	US- 6,100,941	08-08-2000	Dimitrova et al.		
_	 	US- 6,141,041	10-31-2000	Carlbom, et al.		
	 	US- 6,141,060	10-31-2000	Honey et al.		
	<u> </u>	US- 6,144,375	11-07-2000	Jain et al.		
	<u> </u>	US- 6,161,142	12-12-2000	Wolfe et al.		
	 	US- 6,169,542	01-02-2001	Hooks et al.		
	 	US- 6,195,497	02-27-2001	Nagasaka et al.		
	-	US- 6,216,129	04-10-2001	Eldering		
	 	US- 6,219,837	04-17-2001	Yeo et al.		
	 	US- 6,275,268	08-14-2001	Ellis et al.		
	-		10-16-2001	Cavallaro et al.		
	 	US- 6,304,665		Vasudevan et al.		
	1	US- 6,342,904	01-29-2002	 		
	ļ	US- 20020013943	01-31-2002	Haberman et al.		
	-	US- 20020018594	02-14-2002	Xu et al.		
	 	US- 6,363,160	03-26-2002	Bradski et al.		
	1	US- 20020080162	06-27-2002	Pan et al.		

US- 6,418,168 07-09-2002 Narita US-20020120929 08-2002 Schwalb et al. US- 20020141619 10-03-2002 Standridge et al. US- 20020184220 12-05-2002 Teraguchi et al. US- 20020194589 12-2002 Cristofalo et al. US- 20030001880 01-2003 Holtz et al. US- 20030026592 02-06-2003 Kawhara et al. US- 6,549,643 04-15-2003 Toklu et al. US- 6,556,767 04-29-2003 Okayama et al. US- 20030081937 05-2003 US- 6,597,859 07-2003 Leinhart et al. 12-16-2003 US- 6,665,423 Mehrotra et al. US- 6,678,635 01-13-2004 Tovenkere et al. US-20040017389 01-2004 Pan et al. Syeda-Mahmood US- 6,691,126 02-10-2004 04-20-2004 US-6,724,933 Lin et al. US- 20040088289 05-2004 Xu et al. US-20040125124 07-01-2004 Kim et al. US-20040125877 07-2004 Chang et al. US- 6,774,917 08-10-2004 Foote et al. US- 20040227768 11-18-2004 Bates et al. US-6,829,781 12-07-2004 Bhagavath et al. US- 6,931,595 08-2005 Pan et al. US- 6,970,510 11-29-2005 Wee et al. US-6,981,129 12-27-2005 Boggs et al. US- 6,993,245 01-31-2006 Harville

FOREIGN PATENT DOCUMENTS					
Cite	Foreign Patent Document	nt Document Rublication Name of Patentee or		Pages, Columns, Lines,	
No. ¹	Country Code ³ - Number ⁴ - Kind Code ⁵ (<i>if known</i>)	Date MM-DD-YYYY	Applicant of Cited Document	Passages or Relevant Figures Appear	T ⁶
-	Cite No. ¹	Cite Cite	Date	Publication Date Patentee of Applicant of Cited	Country Code ³ - Number ⁴ - Kind Code ⁵ (if known) Name of Patentee or Applicant of Cited Document Publication Date Applicant of Cited Document Passages or Relevant

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²	
		STEPHEN W. SMOLIAR and HONGJIANG ZHANG, "Content-Based video Indexing and Retrieval," IEEE, 1994, National University of Singapore.		
		BILGE BUNSEL, YUE FU and A. MURAT TEKALP, "Hierarchical Temporal Video Segmentation and Content Characterization," SPIE Vol. 3229, 1997, Dept. of Electrical Engineering and Center for Electronic Imaging Systems, University of Rochester, Rochester, NY 14627, pp. 46-56.		
		MARK T. MAYBURY and ANDREW E. MERLINO, "Multimedia Summaries of Broadcast News," IEEE 1997, Advanced Information systems Center, The MITRE Corporation, 202 Burlington Road, Bedford, MA 01730, USA, pp. 442-449.		
		BOON-LOCK YEO and MINERVA M. YEUNG, "Retrieving and Visualizing Video," communications of the ACM, December 1997/Vol. 40, No.12, pp. 43-52.	_	
	:	RICHARD J. QUIAN, M. IBRAHIM SEZAN, and KRISTINE E. MATTHEWS, "A Robust Real-time Face Tracking Algorithm," 1998 IEEE, Sharp Laboratories of America, 5750 NW Pacific Rim Blvd., Camas, WA 98607, pp. 131-135.		
-		DANIEL DEMENTHON, BIKRANT KOBLA and DAVID DOERMANN, "Video Summarization by Curve Simplification," ACM Multimedia 1998, Language and Media Processing (LAMP), University of Maryland, College Part, MD 20742-3275, pp. 211-218.	-	
		Y. KAWAI, et al., "Detection of Replay Scenes in Broadcasted sports Video by Focusing on Digital Video Effects," IEICE (D-II), vol. J84-D-II, No. 2, pp. 432-435, February 2001 (in Japanese).		
		RICHARD O. DUDA and PETER E. HART, "Use of the Hough Transformation To Detect Lines and Curves in Pictures," Stanford Research Institute, Menlo Park, California, 1972, Association for computing Machinery, Inc., pp. 11-15.		
		BAOXIN L1 and M IBRAHIM SEZAN, 'Event Detection and summarization in sports video," Sharp Laboratories of America 2750 NW Pacific Rim blvd., Camas, Washington 98607, at least one year prior to filing.		

E 40	<u>www.pvi.com</u> , at least one year prior to filing.
6 2006 gg	T LAMBROU, P. KUDUMAKIS, R. SPELLER, M. SANDLER and A. LINNEY, "Classification of Audio Signals Using Statistical Features on time and Wavelet Transform Domains," 1998 IEEE, pp. 3621-3624.
Æ/	MICHAEL T. CHAN, YOU ZHANG and THOMAS S. HUANG, "Real-Time Lip Tracking and Bimodal continuous speech Recognition," at least one year prior to filing.
	DULCE PONCELEON, SAVITHA SRINIVASAN, ARNON AMIR, DRAGUTIN PETKOVIC and DAN DIKLIC, "Key to Effective Video Retrieval: Effective Cataloging and Browsing," ACM Multimedia 1998, pp. 99-107.
	YIHONG GONG, LIM TECK SIN, CHUA HOCK CHUAN, HONGJIANG ZHANG, and MASAO SAKAUCHI, "Automatic Parsing of TV Soccer Programs," 1995 IEEE, pp. 167-174.
	RICHARD QIAN, NIELS HAERING, and IBRAHIM SEZAN, "A computational approach to Semantic Event Detection," 1999 IEEE, pp. 200-206.
	F. ARMAN, R. DEPOMMIER, A HSU, and M-Y CHIU, "Content-based Browsing of Video Sequences," Proceedings of ACM International Conference on Multimedia '94, October 15-20, San Francisco, CA, USA.
	HONGJIANG ZHANG, STEPHEN E. SMOLIAR and JIAN HUA WU, "Content-Based Video Browsing Tools," SPIE Vol. 2417, pp. 389-398.
	B.B. CHAUDHURI, N. SARKAR, and P. KUNDU, "Improved fractal geometry based texture segmentation technique," IEE Proceedings-E, Vol. 140, No. 5, September 1993, pp. 233-241.
	GIRIDHARAN IYENGAR AND ANDREW LIPPMAN, "Models for automatic classification of video sequences," SPIE Vol. 3312, 1997, pp. 216-227.
	NEVENKA DIMITROVA and FOROUZAN GOLSHANI, "Motion Recovery for Video Content Classification," ACM Transactions on Information Systems, Vol. 13, No. 4, October 1995, pp. 408-439.
	SHIN'ICHI SATOH and TAKEO KANADE, 'Name-It: Association of Face and Name in Video," School of computer Science, Carnegie Mellon University, Pittsburgh, PA 15213, December 20, 1996.
	R. W. PICARD, "A Society of Models for Video and Image Libraries, " IBM Systems Journal, Vol. 35, Nos 3&\$, 1996, pp. 292-312.
	ALBERTO DEL BIMBO, ENRICO VICARIO and DANIELLE ZINGONI, "A Spatial Logic for Symbolic Description of Image Contents," Journal of visual Languages and computing (1994) 5, 267-286.
	SELIM AKSOY and ROBERT M. HARALICK, "Textural Features for Image Database Retrieval," Intelligent Systems Laboratory, Department of electrical Engineering, University of Washington, Seattle, WA.
	B.S. MANJUNATH and W.Y. MA, "Texture Features for Browsing and Retrieval of Image Data," IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. 18, No.8, August 1996, pp. 837-842.
	NOBORU BABAGUCHI, "Towards Abstracting sports video by Highlights," ISIR, Osaka University, Ibaraki, Osaka 567-0047, Japan, IEEE 2000, pp. 1519-1522.
	RAINER LIENHART, SILVIA PFEIFFER, and WOLFGANG EFFELSBERG, "Video Abstracting," Communications of the ACM, December 1997, Vol. 40, No. 12, pp. 55-62.
	MINERVA M. YEUNG and BOON-LOCK YEO, "Video Visualization for Compact Presentation and Fast Browsing of Pictorial Content," IEEE Transactions on Circuits and Systems for Video Technology, Vol. 7, No. 5, October 1997, pp. 771-785.
	STEPHEN S. INTILLE AND AARON F. BOBRICK, "Visual Tracking Using closed-Worlds," M.I.T. Media Laboratory Perceptual computing Section Technical Report No. 294, November 1994, pp. 1-18.
	JOHN S. BORECZKY and LYNN D. WILCOX, "A Hidden Markov Model Framework for Video Segmentation Using Audio and Image Features," FX Palo alto Laboratory, Palo Alto, CA 94304 USA, at least one year prior to filing.
	PENG XU, SHIH-FU CHANG, AJAY DIVAKARAN, ANTHONY VETRO and HURFANG SUN, "Algorithms and System for High-Level Structure-Analysis and Event Detection in soccer Video," Columbia University, ADVENT-Technical Report #111, June 2001.
	HAO PAN, BAOXIN LI, and M IBRAHIM SEZAN, "Automatic Detection of Replay Segments in Broadcast sports Programs By Detection of Logos in Scene Transitions," Sharp Laboratories of America Inc., 5780 NW Pacific Rim Blvd., Camas, WA, USA, 2002 IEEE, pp. IV-3385-IV-3388.
	NOBORU BABAGUCHI, YOSHIHIKO KAWAI, YUKINOBU YASUGI, and TADAHIRO KITAHASHI, "Linking Live and Replay Scenes in Broadcasted Sports Video," ACM Multimedia Workshop Marina Del Rey, CA, USA, Copyright ACM 2000.
	LEXING XIE, "Segmentation and Event Detection in soccer Audio," EE 6820 Project Soccer Audio, May 15, 2001, pp. 1-9.
	RICCARDO LEONARDI and PIERANGELO MIGLIORATE, "Semantic Indexing of Multimedia documents," April- June 2002, IEEE, pp. 44-51.
	LEXING XIE, SHIH-FU CHANG, AJAY DIVAKARAN, and HUIFANG SUN, "Structure Analysis of Soccer Video with Hidden Markov Models," Department of Electrical Engineering, Columbia University, NY, NY and Mitsubishi

OIPE	RICHARD W. CONNERS and CHARLES A. HARLOW, "A Theoretical Comparison of Texture Algorithms," IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. PAMI-2, No. 3, may 1980, pp. 204-222.	
EP 2 6 7006 8	SUNGHOON CHOI, YONGDUEK SEO, HUNWOO KIM and KI-SANG HONG, "Where are the ball and players?: Soccer Game Analysis with color-based Tracking and Image Mosaick," Dept. of EE, Pohang University of Science and Technology, San 31 Hyoja dong, Pohang, 780-784, Republic of Korea, pp. 1-15.	
3	CHUNG-LIN HUANG and CHIH-YU-CHANG, "video Summarization using Hidden Markov Model," Electrical Engineering Department, National Tsing-Hua University, Hsin-Chu, Taiwan, ROC, 2001 IEEE, pp. 473-477.	
LERAD MARCH	CHRISTEL, MICHAEL G., HAUPTMANN, ALEXANDER G., WARMACK, ADRIENNE S., and CROSBY, SCOTT S., "Adjustable Filmstrips and Skims as Abstractions for a Digital Video Library," Computer Science Department, Carnegie Mellon University, Pittsburgh, PA; pp. 1-7. VASCOCELOS, NUNO, AND LIPPMAN, ANDRES, "Bayesian Modeling of Video Editing and Structure: Semantic	
	Features for Video Summarization and Browsing," 1998 IEEE Journal, pp. 8186-8821, January 1998.	
	MASUMITSE, KEN AND SCHIGO, TOMIO, "video Summarization Using Reinforcement Learning in eigenspace; IBM Research, Tokyo Research Laboratory 1623-14, Shimotsuruma, Yamatoshi, Kanagawa, Japan.	
	INSTILLE, STEPHEN S., "Tracking Using a Local closed-World Assumption: Tracking in the football domain," MIT Media Arts and Sciences Master Thesis, August 5, 1994, pps. 1-62.	
	KOBLA, DANIEL ET AL., "Identifying Sports Videos Using Replay, Text, and Camera Motion Features," Laboratory for Language and Media Processing at the University of Maryland, consisting of 12 pages.	
	LEVINSON, S.E., et al., "An Introduction to the application of the Theory of Probabilistic Functions of a markov Process to Automatic speech Recognition," The Bell System Technical Journal, vol. 62, No. 4, april 1993, pps. 1035-1074.	
	SAUR, DREW D., et al., "Automated analysis and Annotation of Basketball Video, SPIE, Vol 3022, pp. 176-187.	
	YOW, DENNIS ET AL., "Analysis and Presentation of Soccer Highlights from Digital Video," Second Asian Conference on Computer Vision 1995, consisting of five pages.	
	GOLIN, STUART J., "New Metric to Detect Wipes and Other Gradual Transitions in video," SPIE vol. 3653, January 1999.	
	COURTNEY, JONATHAN, "Automatic video Indexing via Object Motion Analysis," Pattern Recognition, Vol. 30, No. 4, pps. 6007-625, 1997.	
	SMITH, MICHAEL A., ET AL., "Video Skimming for Quick Browsing Based on Audio and Image characterization," Carnegie Mellon School of computer Science, July 30, 1995, consisting of 21 pages.	
	KSCHISCHANG, FRANK R., et al., "Factor Graphs and The Sum-Product Algorithm, " IEEE Transactions On Information theory, Vol. 47, No. 2, February 2001, pps. 498-519.	
	EICKLER, STEFAN, et al., "Content-Based Video Indexing of TV Broadcast News Using Hidden Markov Models, IEEE International Conference on Acoustics, speech and Signal Processing, Phoenix, AZ, 1999, consisting of four pages.	
	SMYTH, PADHRAIC, "Belief Networks, Hidden Markov Models and Markovs Random fields: A Unifying view, Pattern Recognition Letters, Vol. 18, 1998, consisting of 11 pages.	
	WOLF, WAYNE, "Hidden Markov Model Parsing of Video Programs, IEEE International Conference on Acoustics, Speech and Signal Processing, 1997, pps. 2609-2611.	
	PAN, H., et al. "Detection of Slow-Motion Replay Segments in sports Video for Highlights Generation," IEEE International Conference on Acoustics, speech and Signal Processing, Salt Lake city, UT 2001, consisting of four pages.	
	RUI, YONG, et al. "Automatically Extracting Highlights for TV Baseball Programs," Microsoft Research, 2000 pps. 105-115.	
	RABINER, LAWRENCE R., "A Tutorial on Hidden Markov Models and selected Applications in speech Recognition," IEEE, Vol. 77, No. 2, February 1989, pps. 257-286.	
	BORECZKY, JOHN S., et al., *A Hidden Markov Model Framework for video Segmentation Using Audio and Image Features, IEEE International conference on Acoustics, speech and signal Processing, Seattle, WA 1998, consisting of four pages.	
	LU, H.B., et al. "Robust Gradual Scene Change Detection, IEEE International conference on Image Processing, Kobe, Japan, 1999, consisting of five pages.	
	LIU, ZHU, et al., "Detecting News Reporting Using Audio/visual Information, IEEE International conference on Image Processing, Kobe, Japan, 1999, consisting of five pages.	
	ULLAS, GARGI, ET AL., "Transaction Letters: Performance Characterization of Video-Shot-Changes Detection Methods," IEEE Transactions on Circuits and Systems for Video technology, vol. 10, No. 1, February 2000, pps. 1-13.	
	LIENHART, RAINER, "Comparison of Automatic Shot Boundary Detection algorithms," SPIE Vol. 3656, January 1999, pps. 290-301.	
	NAPHADET, M.R., ET AL., "A High Performance Shot Boundary Detection Algorithm Using Multiple Cues," IEEE International conference on Image Processing, Chicago, IL 1998, pps. 884-887.	

Rg.	871-874.
(گر) (بو	WANG, TAO, et al., "Multimedia content-analysis, IEEE Signal Processing Magazaine, November 2000, pps. 12-35.
	YEO, BOON-LOCK, et al., "On the Extraction of DC Sequence From MPEG compressed video, IEEE 1995, pps. 260-263.
	CANNY, JOHN, "A Computational approach to Edge Detection, IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. PAMI-8, No. 6, November 1986, pps. 679-698.
	KOBLA, VIKRANT et al., "Detection of Slow-Motion Replay Sequences for Identifying Sports Videos," University of Maryland, consisting of six pages.
	YEUNG, MINERVA, et al. "Extracting Story Units from Long Programs for Video Browsing and Navigation," IEEE Proceedings of Multimedia, 1996, pp. 296-305.

Examiner	Date	
Signature	Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.